

M8727 SERIES

DUAL-OUTPUTS, 80W DC TO DC POWER SUPPLY

The M8727 is a series of mechanically robust, base-plate cooled, high performance, power supplies, designed for Ground Mobile (MIL-STD-1275), Airborne (MIL-STD-704) and other Hi-Reliability applications where 28VDC has to be converted to a tightly regulated, filtered and protected DC output.



M8727 Series– DC/DC Power Supply

Standard Models List (for other voltages – consult factory)

Part number	Input		Output 1		Output 2	
	Voltage range	Output Power	Voltage	Current	Voltage	Current
M8727100	18V _{DC} -48V _{DC}	73W	3.3 V _{DC}	10 A	5 V _{DC}	8 A
M8727101	18V _{DC} -48V _{DC}	76W	5 V _{DC}	8 A	12 V _{DC}	3 A
M8727102	18V _{DC} -48V _{DC}	69W	12 V _{DC}	3 A	3.3 V _{DC}	10 A
M8727103	18V _{DC} -48V _{DC}	79.2W	28 V _{DC}	1.4 A	5 V _{DC}	8 A
M8727104	18V _{DC} -48V _{DC}	78.4W	48 V _{DC}	0.8 A	5 V _{DC}	8 A
M8727105	18V _{DC} -48V _{DC}	40W	5 V _{DC}	5 A	5 V _{DC}	3 A

- Additional standard configurations available. **Contact factory for more details.**
- All our products can be configured to comply with EU REACH regulations. **Contact factory for more details.**

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THE MAIN FEATURES OF THE M8727 ARE:

- DC/DC Triple outputs power supply up to 80W
- 18 to 48VDC Standard Input version
- For extended input version - **Please contact factory for more details**
- Miniature size
- High efficiency
- Wide input range
- Up to 20 W/in³
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- TTL logic enable
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Input over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

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SPECIFICATIONS:

DC Input	<i>Voltage Range</i>	DC Input range: 18 to 48V _{DC} For extended input version - Please contact factory for more details
	<i>Isolation</i>	200V _{DC} between Input and Output 200V _{DC} between Input and Case
	<i>Input transient</i>	<u>Input transient protection:</u> All models withstand surges (no operation, no damage) IAW MIL-STD-1275A (100V for 50ms) and MIL-STD-704A/D (80V for 0.1s)
DC Output	<i>Rating</i>	See table on page 6
	<i>Voltage Regulation</i>	Better than or equal to $\pm 1\%$ (low to high line voltage, no load to full load, -55°C to $+85^{\circ}\text{C}$ at baseplate).
	<i>Ripple & Noise</i>	50mV _{p-p} , typical (up to 1%) <u>Current limiting (Foldback):</u> Continuous protection for unlimited time
	<i>Isolation</i>	100V _{DC} between Output and Case
	<i>Current Limit & Overload</i>	Continuous protection for unlimited time Overload/short-circuit
	<i>Efficiency</i>	Efficiency: Up to 82%
	<i>Overvoltage Protection</i>	<u>Over voltage protection:</u> Passive transorb on output at $+120^{\circ}\text{C} \pm 5^{\circ}\text{C}$
	<i>Over Temp. Protection</i>	<u>Over temperature protection:</u> Shutdown if baseplate temperature exceeds. $+105^{\circ}\text{C} \pm 5^{\circ}\text{C}$. Automatic recovery at baseplate temperature lower than $+95^{\circ}\text{C} \pm 5^{\circ}\text{C}$.
	<i>Line/Load regulation</i>	Up to $\pm 1\%$ (Low to high line voltage, no load to full load, -55°C to $+85^{\circ}\text{C}$)

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Specifications (Cont.):

Control & Indication	<i>INHIBIT Input</i>	The INHIBIT signal is used to turn the power supply ON and OFF. TTL “1” or OPEN – Power supply active (output turned on). TTL “0” or SHORT to Signal RTN – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.
	<i>SIGNAL RTN</i>	INHIBIT and SYNC signals are referenced to this pin. This pin is referenced to IN RTN
	<i>SYNC IN signal</i>	The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250 kHz $\pm$ 10 kHz. When not connected the power supply will work with internal sync at 250 kHz $\pm$ 10 kHz. This signal is referenced to the SIGNAL RTN pin.
Environment Designed to meet MIL-STD-810F	<i>Temperature</i>	Operating -55°C to +85°C (baseplate) Storage -55°C to +125°C
	<i>Humidity</i>	Method 507.4 Up to 95% RH
	<i>Salt-fog</i>	Method 509.4
	<i>Altitude</i>	Method 500.4
	<i>Mechanical Shock</i>	Method 516.5
	<i>Vibration</i>	Method 514.5
EMI	<i>Fungus</i>	Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4
	<i>MIL-STD-461F</i>	Designed to meet* MIL-STD-461F* CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
Reliability	150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, ground fixed	
Cooling Requirements	The M8727 is a baseplate cooled unit. The base of the M8727 should be thermally attached to suitable heatsink that maintains it below +85 °C.	
Form factor	2.6" wide, 3.75" high and 0.5" deep. For detailed dimensions and tolerances see Drawing: M8727001	
Weight	6.35oz (180gr)	
Connectors	See Page 6	

* Compliance achieved with 5μH LISN, shielded harness and static resistive load.

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OUTPUTS RANGE

Output #	Voltage Range	Current Range	Output Regulation	Power Range
1	1.5 to 70 V _{DC}	0 to 10 A	±1%	0 to 40 W
2	1.5 to 70 V _{DC}	0 to 10 A	±1%	0 to 40 W
Total				0 to 80 W

PIN ASSIGNMENT

Connector type: Airborne RM272-040-312-2900 or eq.

Mates with: Airborne RM242-040-571-5900 (crimp removable pins) or RM242-040-241-5900 (solder cup pins).

Pin No.	Function	Pin No.	Function	Pin No.	Function
18, 19, 20, 38, 39	VOUT 1 (+)	6, 7, 25, 26, 27	VOUT 2 RTN (–)	15	SENSE 1 RTN (–)
16, 17, 35, 36, 37	VOUT 1 RTN (–)	1	SYNC	2	SENSE 2 (+)
12, 13, 32, 33	VIN (+)	21	SIGNAL RTN	8	SENSE 2 RTN (–)
10, 11, 29, 30	VIN RTN (–)	22	INHIBIT	14	CHASSIS
3, 4, 5, 23, 24	VOUT 2 (+)	40	SENSE 1 (+)	9, 28, 31, 34	N.C.

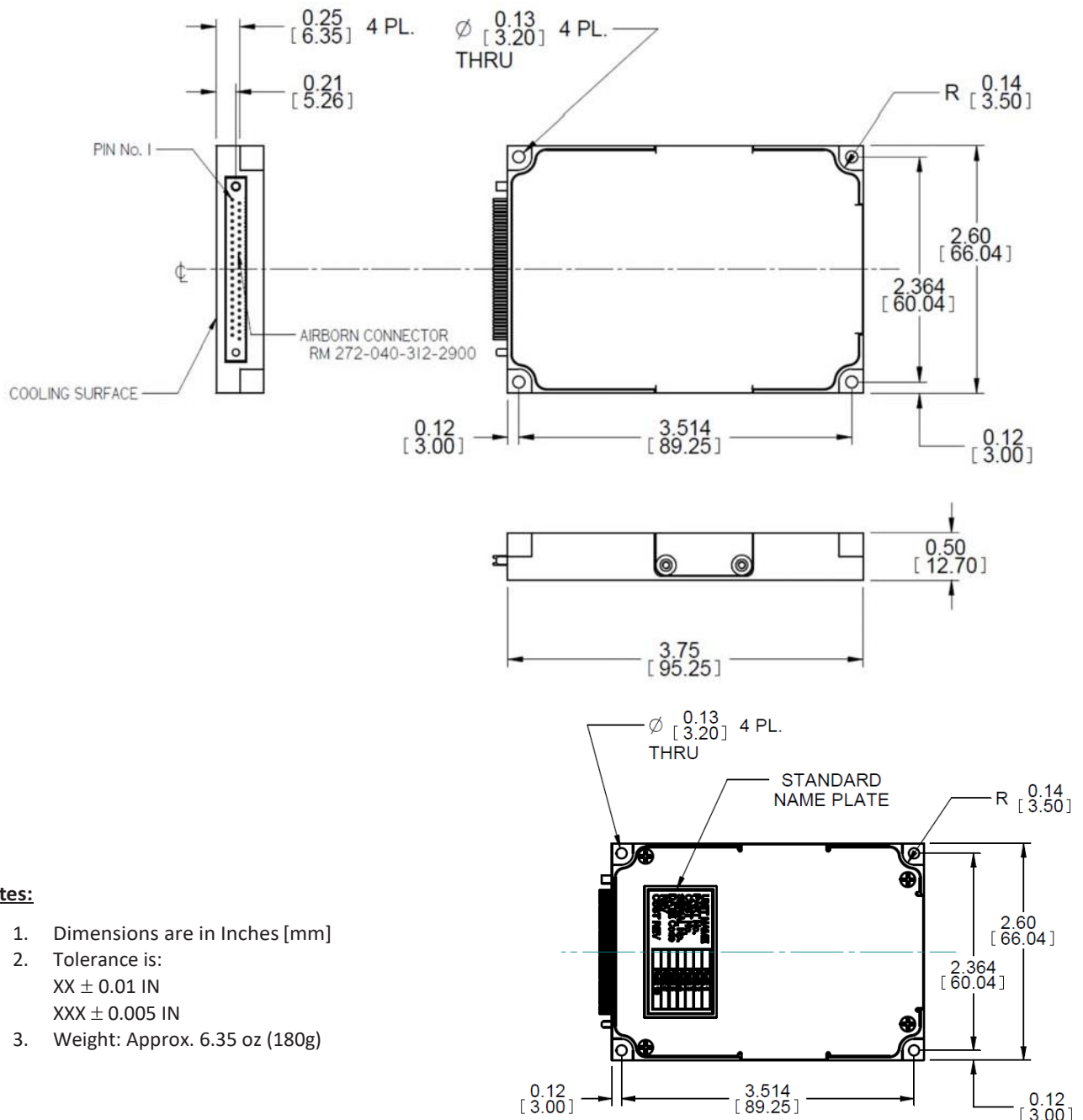
Notes:

1. SIGNAL RTN is the reference line for INHIBIT and SYNC signals.
2. For optimal performance, connect all pins with identical function/designation together.
3. Always connect the sense lines to either the respective load terminals or their respective output pins – do not leave the sense lines open! Please contact factory if sense functionality is not required.

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OUTLINE DRAWING

For detailed dimensions and tolerances see Drawing: M8727001



Notes:

1. Dimensions are in Inches [mm]
2. Tolerance is:
XX ± 0.01 IN
XXX ± 0.005 IN
3. Weight: Approx. 6.35 oz (180g)

Please note: Specifications are subject to change without prior notice by the manufacturer.